REMARKS

Dealing with preliminary matters first, accompanying this Amendment is a Corrected Application Data Sheet in which the inventor's name has been corrected. Further, the Applicant thanks the Examiner for having considered the Information Disclosure Statement filed with the application.

In what appear to be related rejections, the Examiner states that claims 1-10 of this application conflict with claims 1-7 of copending Application S.N. 10/691,527; and claim the same invention under §101 and §102(g) or (f) as that of claims 1-7 of the co-pending '527 application.

Applicants respectfully submit that the claims of the subject application do not conflict or otherwise claim the same invention as those in the '527 application. The test for interfering or conflicting subject matter is set forth in MPEP 2301.03: "If the claimed invention of either party is patentably distinct from the claimed invention of the other party, then there is no interference-in-fact."

In the present instance, the subject matter of the instant application was invented before the subject matter of the co-pending '527 application. The invention claimed in the '527 application relates in fact to an improvement of the system of the instant application. To that end, the claims of the '527 application recite features which are not recited in the claims of the subject application and which are not obvious in view of the prior art. Specifically, claim 1 of the '527 recites:

wherein

- said processing means includes a neural network control system,

- said sensor means comprises first and second electroencephalographic sensors and an electromyographic sensor,

- at least the first and second encephalographic sensors are placed close to respective ears of the animal, or close to its occipital-temporal region, and the electromyographic sensor is placed on the animal's neck, and

- said pulse-generating means send radioelectric waves directly to the animal's brain.

It is submitted that these features of claim 1 of the '527 patent are not recited in any of the claims of the subject application and would not have been obvious to a person of ordinary skill in the art. As such, the two claim sets do not conflict or otherwise claim the same invention as asserted by the Examiner; the claims are patentably distinct from each other. Thus, these rejections are respectfully traversed.

Claims 1-10 are also objected to as containing a number of informalities. Further claim 10 is rejected under 35 U.S.C. § 112 (second paragraph) as being indefinite. It is submitted that the above amendment to the claims overcome this objection and rejection.

Claims 1-10 are also rejected under 35 U.S.C. § 103(a) as being unpatentable over DeVito) (U.S. Patent No. 6,254,536) in view of Moore (U.S. Patent No. 5,749,324), Plotkin (U.S. Patent No. 6,178,923) and Naritoku, et al. (U.S. Patent No. 6,556,868). For the following reasons, Applicant respectfully traverses the Examiner's rejections.

The instant invention relates to a device and a method to allow a bi-directional interaction between a human user and an animal, which interaction is mediated through a control unit, sensors means, stimuli generating means, speech recognition means and a loudspeaker.

As mentioned in claim 1, the device has:

> *a) a matrix of sensors, to convert stimuli detected on the body of the animal into first electric signals, which signals are indicative of a status of the animal (such as EEG or ECG signals),*
>
> *b) processing means associated to the above sensors, including memory mean's wherein human-type vocal messages are recorded, corresponding to various possible statuses of the animal,*
>
> *c) a loudspeaker, connected to the processing means,*
>
> *d) speech recognition means, adapted to convert the contents of vocal messages coming form a human user into second signals,*
>
> *e) stimuli generating means, arranged on the body of the animal.*

The processing means are:

> *- responsive to the first signals, from the sensors, in order to select a human-type vocal message stored in the memory means, which message is then emitted through the loudspeaker;*
>
> *- responsive to the second signals, from the speech recognition means, in order to send corresponding stimuli to the animal brain, so as to induce the animal to take determined actions or perceive determined feelings; these stimuli are perceived by the animal concurrently with the vocal message coming from the human user.*

The Examiner rejected claims 1-10 based on the combination of four references, i.e., US 6,254,536 to DeVito, US 5,749,324 to Moore, US 6,178,923 to Plotkin and US 6,556,868 to Naritoku.

Applicants submit that the Examiner is applying hindsight, as none of the cited references discloses or suggests an bi-directional interaction between a human user and an animal, as required by the claims of the subject application.

The Examiner states that DeVito teaches a vocal connection system between humans and animals. This is not correct. DeVito discloses a method and a apparatus for measuring and analyzing bio-electric signals (such as EEG ed EMG) for the control of physical or virtual spaces. In particular, the apparatus is devised for interacting with various electronic media, such as videogames, or CD readers, or systems for virtual reality or computer animation.

DeVito shows some structural similarities with the instant invention only in connection with figures 4a-4c and 18-19. A headband for a human user is provided with electrodes, for detecting bio-electric signals on the user's head; a control unit converts the detected signals into control signals which are sent in a wireless mode, through proper transmitting means, to a receiving unit which then controls accordingly a further device, such as a CD reader.

Apart from a band to be arranged on a living body, including sensors for bioelectric signals, DeVito has nothing to share with the instant invention as recited in the pending claims. DeVito does not provides for any interactions between a human and an animal.

The Examiners then states that Moore teaches modifying animal behaviors by sound recognition or activation means coupled to a meaningful responsive action, etc.

However, this concept extrapolated from Moore has no real relations with simulating the ability of speaking for an animal. Moore discloses an apparatus for controlling (i.e., modifying)

the behavior of an animal. This apparatus comprises sound processing means arranged for reacting, in a selective way, to a plurality of possible sounds. The device further comprises an actuator means coupled to the processing means, which actuator controls a stimulus generator.

The sound processing means process one or more sounds produced by the animal, which are deemed to be indicative of the emotional state thereof. The processing means detects the level of the sound produced by the animal, among a plurality of possible levels, by comparison with stored data. When the processing means recognize one or more sound produced by the animal, they activates the actuator means which, via the cited generator, supply the animal with a stimulus. More particularly, the device analyzes the animal's "vocalization" and deduces the feeling thereof to generate adverse stimulus, which can be a small electrical shock, or an ultrasounds stimulus (see figure 4, part 4b or column 8, lines 7-26) or else a human type command (if the dog were barking, the command could be "shut up!").

Thus, here again, there is no interaction between the animal and a human. The device only controls the animal behavior based on the sounds produced by the animal itself.

The Examiner then refers to Plotkin, stating that this document would teach processing means associated with a matrix of sensors including memory means in which human vocal-messages are recorded, corresponding to various status of the animal. The Examiner specifically refers to col. 2, line 67- col. 3 line 4 of Plotkin. It is noted that Plotkin does not disclose any sensors or stored messages corresponding to animal's statuses.

Here again the Examiner is extrapolating single passages of the reference out of the real context thereof.

Applicant acknowledges that the device of Plotkin is able to "simulate" the possibility of speaking for an animal, but it is crystal clear that the way in which this possibility is implemented differs from the claimed invention.

Plotkin merely discloses a dog collar equipped with a loudspeaker in signal communication a control unit mounted in a handle of a leash. This unit comprises a supply source, a controller, a memory and a selection device. The memory contains a plurality of possible human-type vocal messages that the user is allowed to assign to the animal. Through the selection means of the leash handle, the user can select the desired stored message, which is then emitted through the loudspeaker.

It is true that the device of Plotkin has memory means containing human-type vocal messages. However, in the instant invention these vocal messages are automatically selected by a control unit based on stimuli detected on the animal's body, whereas Plotkin simply implies the human user to select by hand, at his or her own discretion, the message to be emitted through the loudspeaker.

The Examiner formally refers to Naritoku, which would allegedly suggest using stimuli generating means on the body of the animal to receive the second signal (i.e., in the instant invention,, the signal coming from the claimed vocal recognition means) and send corresponding stimuli to the animal's brain.

Noritoku actually relates to methods and apparatuses for improving learning or memory by vagus nerve stimulation. According to the disclosure of Noritoku, vagus nerve stimulation would allow to modulate neuronal plasticity of the nervous system, and thus treat humans or animals having memory problems or suffering of cerebral damages, or for improving their learning ability. Here a stimuli generator must be implanted in the patient's body, which

generator is programmed through an external personal computer. Here stimulation is not responsive to voice commands from a user, and no sensors are provided on the body of the treated humans or animals.

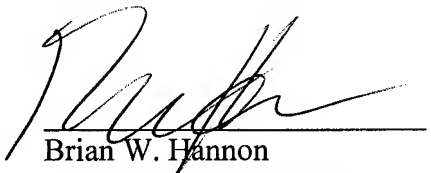
Summarizing, it is not seen how a skilled man could consider combining so many references, pertaining to differing technical fields, unless applying hindsight.

For the Examiner's consideration, Applicants submit herewith the European patent granted on the related European application having claims of similar scope to those here.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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